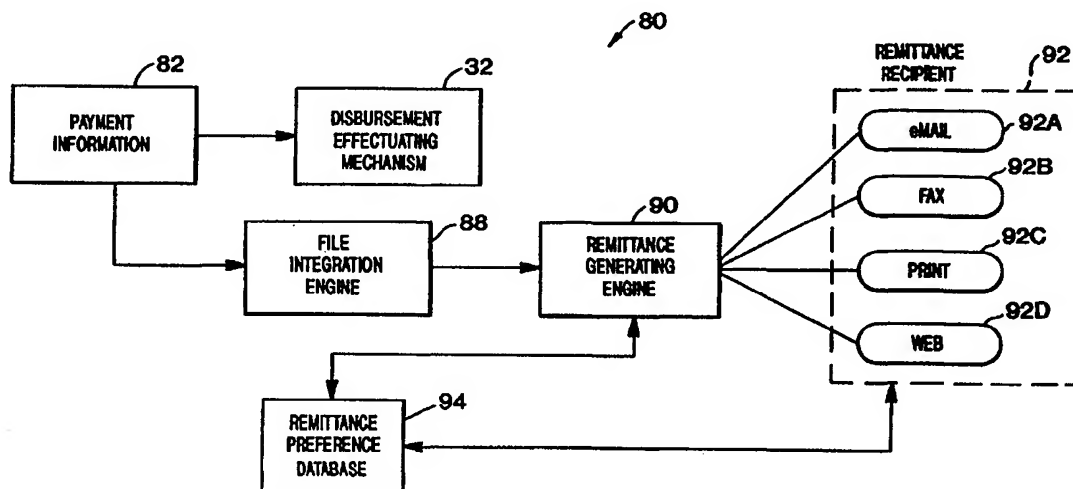




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04L 29/06, G06F 13/42		A1	(11) International Publication Number: WO 00/39979
			(43) International Publication Date: 6 July 2000 (06.07.00)
(21) International Application Number: PCT/US99/31248 (22) International Filing Date: 30 December 1999 (30.12.99) (30) Priority Data: 09/223,106 30 December 1998 (30.12.98) US (71) Applicant: BOTTOMLINE TECHNOLOGIES (DE), INC. [US/US]; 155 Fleet Street, Portsmouth, NH 03801 (US). (72) Inventors: MCGURL, Daniel, M.; 116 Pepperell Way, York, ME 03909 (US). O'TOOLE, Margaret; P.O. Box 676, North Berwick, ME 03906 (US). HERMAN, Helmar; One Thornton Lane, Lee, NH 03824 (US). (74) Agent: PFLEGER, Edmund, Paul; Hayes, Soloway, Hennessey, Grossman & Hage, PC, 130 W. Cushing Street, Tucson, AZ 85701 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>	

(54) Title: AUTOMATIC REMITTANCE DELIVERY SYSTEM



(57) Abstract

A remittance delivery system (10) is provided that accepts payment information (12, 14, 16, 82) from a variety of applications (e.g. vendor payments, taxes, claims, payroll, T & E, commissions, trust, etc.) (16) translates (18) the data into a single, unified data file structure, and forwards the remittance data via a user-defined path (32, 34, 36, 92), for example, email (92A), fax (92B), print (92C), Internet (92D), etc. Accordingly, the preferred embodiment of the present invention provides a remittance delivery system (10) comprising a file integration engine (88) for receiving remittance data (12, 14, 16, 82) in one of a plurality of data formats and translating and formatting the remittance data (12, 14, 16, 82) into a single predefined data format. In addition, a remittance generating engine (88) is provided for receiving the predefined data (94) and forwarding remittance data to at least one remittance recipient (32, 34, 36, 92).

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AUTOMATIC REMITTANCE DELIVERY SYSTEM

This application is a continuation-in-part of Application Ser. No. 506,579 filed July 25, 1995 and assigned to the same assignee.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to a computerized disbursement system and method, and, more specifically, to a computerized system and method for automatic remittance delivery via one or more delivery mechanisms, based upon pre-defined criteria stored in a database.

Brief Description of Related Art

Computerized financial data processing and accounting systems are well known in the art. Typically, such systems permit the user to effectuate disbursements by e.g., printing checks and making payments via electronic funds transfers (EFT), monitor and balance bank accounts, and/or perform automated auditing and billing functions.

One prior art financial data processing system is disclosed in U.S. Pat. No. 5,121,945 to Thompson et al. The system disclosed in this patent automatically debits or credits multiple bank account records and accounts receivable records based customer payments. The system prepares integrated documents including an invoice and a check using a laser printer. Issuance of the document is based upon database tables with information including customer name and address, financial institution and account number, payee name and address, billing amount, accounts receivable account number, etc. Such data may be input manually or from other databases. The document is sent to the customer being invoiced, who fills out various sections of the front portion of the check, signs it, and returns it to the invoicer for cashing. The system also permits payment by EFT rather than check, via e.g., credit card, automated clearing house, automatic teller machine, etc. Access to database information may be protected by requiring entry of a password and/or security code information. The system also generates various accounting reports based upon the customer database information.

Another such system is disclosed in U.S. Pat. No. 4,385,285 to Horst et al. The patent discloses a check dispensing system for issuing checks from a terminal. The system includes an identification card reader for identifying an account number from which to draw funds for the check and a handwriting transducer from inputting identification data to determine whether the user is authorized to issue checks from the account number. The system also includes a keypad for inputting the desired amount of the check and bank data

1 system for evaluating the current balance of the account and whether there are sufficient
2 funds to issue the check for the amount requested. The system evaluates whether the
3 signature provided via the transducer matches with an authorized signature on file and/or
4 requests other authentication data, e.g., palm print, identification number, etc. If the system
5 accepts the user's request to issue the check, the user then is prompted to input a payee code
6 number to identify to whom the check is to be made payable. A printer prints the check.

7 Another prior art financial data processing system is provided by Intuit corporation's
8 Quicken 5TM financial management computer program. The Quicken 5TM program tracks
9 user checking, savings, credit card, investment, and loan accounts. It also performs basic
10 budgeting, financial planning, and audit report generating functions. It also includes check
11 disbursement (from pre-printed check stock) and electronic bill paying functions.

12 Yet another prior art financial data processing system is provided by Bottomline
13 Technologies, Inc., the assignee of the subject application, by the company's Lasercheck®
14 computer program. The company's Lasercheck® computer program comprises a standalone
15 check writing system which permits a user to produce a completed check on blank paper
16 using MICR information. The company's Lasercheck® computer program also performs
17 basic accounting report generating functions and security while eliminating typing or
18 handwritten checks.

19 Unfortunately, none of the aforesaid prior art permits fully automated payment
20 disbursement according to user-predefined criteria, such as, disbursement financial account
21 (e.g., bank or investment account number and type of account) and manner of payment (e.g.,
22 whether disbursement is to be made by hard-copy Magnetic Ink Character Recognizable
23 (MICR) negotiable instrument or by EFT) for different types of disbursements to be made
24 (e.g., payments to suppliers rebates, taxes, etc.) and individual disbursement requests (e.g.,
25 including such information as disbursement amount, intended payee, etc.). Additionally,
26 none of the aforesaid prior art provides fully automated diagnostic means for monitoring
27 whether the system is functioning properly and for preventing improper disbursements from
28 taking place.

29 Other examples of prior art financial data processing systems and methods are
30 disclosed in U.S Pat. No. 5,283,829 to Anderson and U.S Pat. No. 5,193,055 to Brown.
31 These systems and methods also suffer from the aforesaid and/or other disadvantages of the
32 aforesaid prior art.

33 Another aspect of payment disbursement is remittance information delivery.
34 Remittance information, as is understood in the art, is generally of the form of a list of items

1 for which the payee is receiving payment, and may includes item purchased (e.g., serial
2 number, name, SKU, etc.), date purchased, itemized amount, total amount, etc.

3 For example, for transactions between enterprises, financial EDI (FEDI) is the
4 recommended solution for organizations wishing to pay other organizations (typically
5 vendors) electronically. FEDI requires that the payor have specialized software to create
6 standardized electronic payment formats. Moreover, the vendor's bank must be capable of
7 transacting under the FEDI standard. However, according to the National Automated
8 Clearing House Association (NACHA), only 15% of banks in the US are able or willing to
9 receive and pass on FEDI information. Also, the vendor (payee) must translate the electronic
10 invoice information included with the payment and map the information into their accounts
11 receivable system. Thus, significant roadblocks exist for businesses wishing to reap the
12 benefits of paying electronically.

13 Transactions among individual suffer similar drawbacks. For example, some payroll
14 systems can produce electronic payments for employees. Most other payment systems, for
15 example, T&E, claims, trust, interested and dividend, still only create paper checks. Even if
16 the payment is made electronically, the payee is notified of the payment via a "deposit advice
17 form" – a piece of paper. This deposit advice form still requires handling, possibly postage,
18 and distribution. Mail delays and loss create confusion and dissatisfaction on the vendors
19 side.

20 SUMMARY OF THE INVENTION

21 Accordingly, the present invention to overcome these drawbacks of prior art
22 remittance advice delivery by automatically coupling the payment data portion of payment
23 information (from a payor to a vendor) with the remittance statement data that is associated
24 with the payment data to facilitate seamless reconciliation of accounts receivable.

25 In addition, the present inventions solves integration shortcomings of the prior art by
26 providing a system that accepts payment information from a variety of applications (e.g.
27 vendor payments, taxes, claims, payroll, T&E, commissions, trust, etc.), translates the data
28 into a single, unified data file structure, and forwards the remittance data via a user-defined
29 path, for example, email, fax, print, internet, etc.

30 Accordingly, the preferred embodiment of the present invention provides a remittance
31 delivery system comprising a file integration engine is provided for receiving payment data
32 including remittance data in a one of a plurality of data formats and translating and
33 formatting the payment data into a single, pre-defined data format. In addition, a remittance
34 generating engine is provided for receiving the pre-defined data and for forwarding

1 remittance data to at least one remittance recipient.

2 These and other features and advantages of the present invention will become
3 apparent as the following Detailed Description proceeds and upon reference to the Drawings
4 wherein like numerals depict like parts, and in which:

5 BRIEF DESCRIPTION OF THE DRAWINGS

6 Figure 1 is a block diagram of the functional components of one embodiment of the
7 system of the present invention;

8 Figure 2 is a block flow diagram of one embodiment of the process of the present
9 invention;

10 Figure 3 is a block diagram of the functional components of the remittance advice
11 delivery system of the present invention; and

12 Figure 4 is an exemplary data file for use by the system of the present invention.

13 It will be appreciated by those skilled in the art/ that although the following Detailed
14 Description will proceed with reference being made to preferred embodiments, the present
15 invention is not intended to be limited to these embodiments. For example, it should be
16 understood from the outset that although preferably the functional components of the
17 preferred embodiments of the system of the present invention are embodied as one or more
18 distributed computer program processes running on one or more conventional general
19 purpose computers (e.g., IBM-compatible, Apple MacIntosh, and/or RISC microprocessor-
20 based computers), conventional telecommunications (e.g., modem and/or ISDN means), and
21 MICR devices networked together by conventional network hardware and software, other
22 types of computers and network resources may be used without departing from the present
23 invention. Furthermore, it should be appreciated from the outset that one or more of the
24 functional components may alternatively be constructed out of custom, dedicated electronic
25 hardware and/or software, with departing from the present invention. Thus, the present
26 invention is intended to cover all such alternatives, modifications, and equivalents as may be
27 included within the spirit and broad scope of the invention as defined only by the hereinafter
28 appended claims.

29 As used herein, payment information includes check data and remittance data. As
30 shown in Figure 4, check data 86 is that data processed according to the herein-described
31 invention of Figure 1 and 2. Remittance data 84 is that data processed according to the
32 invention described with reference to Figure 3.

33 DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

34 Turning to Figures 1-2, preferred embodiments of the system and process of the

1 present invention will now be described. Embodiment 10 comprises means 12 for receiving
2 individual disbursement requests from conventional user data entry means/control means 14
3 and/or external application program interface/conversion means 16. Data entry means 14
4 preferably comprises a conventional graphical user interface running on a terminal screen
5 and having a plurality of data fields for permitting entry of the data making up an individual
6 disbursement request. Additionally, means 14 permits user control of the system, and access
7 to information stored in the system, in the manner that will be described more fully below.
8 Interface/conversion means 16 preferably takes information to be included in individual
9 disbursement request from other systems (e.g., other application programs, such as
10 accounting or financial database systems) and converts that information into a format usable
11 by the system 10. As will be described more fully below, means 16 also receives and
12 converts information from other systems to be included in disbursement criteria to be stored
13 in the database 20.

14 Preferably, an individual disbursement request includes information related to the
15 type and/or name of payee, amount of disbursement, payee group, etc. The request may also
16 include the desired negotiable instrument, however, as will be described more fully below, if
17 this information is not supplied and disbursement by negotiable instrument is desired, the
18 user may command the system 10 to automatically determine what the next sequential
19 negotiable instrument number should be, and to cause the negotiable instrument generated by
20 the system 10 to have that number. Alternatively, the negotiable instrument generated may
21 have no number.

22 Individual disbursement requests entered into the system 10 via the receiving means
23 12 are then transmitted to the payment disbursement/command generator means 18.
24 Generator means 18 automatically generates an individual payment disbursement and
25 commands for effectuating same based upon the individual disbursement request received by
26 the receiving means 12 and user-predefined disbursement criteria stored in the database
27 means 20. preferably, the generator means 18 accomplishes this by automatically
28 determining the type of the individual request by querying the database means 20 as to
29 whether the payee name, type, and/or group data of the individual request received from
30 receiving means 12 corresponds to disbursement criteria currently found in the database 20.
31 If such correspondence is found to exist, the database means 20 transmits to the generator
32 means 18 the disbursement criteria corresponding to the individual request. The generator 18
33 then uses the information transmitted from the database 20 and that from the individual
34 request to generate control signals for permitting user preview of the disbursement by the

1 preview means 30 and ultimately, effectuation of the disbursement by one or more
2 effectuating mechanisms 32, as
3 will be described more fully below. If such correspondence is not found to exist, the user
4 may be prompted by the preview means 30 (which is described more fully below) to supply
5 the missing information (i.e., the information that would have been supplied by the
6 disbursement criteria had it been stored in the database means 20), which is then used by the
7 generator 18 to generate the control signals.

8 Disbursement criteria are stored in database means 20. As discussed briefly above, in
9 system 10, this is accomplished by entering the data for the criteria for each payee type (i.e.,
10 payee name and/or group) into the system 10 via the data entry means 14 and/or
11 interface/conversion means 16. This information is then transmitted to and stored in the
12 database means 20. preferably, database means 20 comprises a conventional SQL-type
13 relational database in which disbursement criteria are associated according to payee name,
14 type, and/or group. preferably, the disbursement criteria for each payee type includes the type
15 and manner of disbursement desired (i.e., whether disbursement is desired by EFT or printed
16 negotiable instrument) and the type of account from which disbursement is desired (e.g.,
17 bank or credit card account). Additionally, the disbursement criteria may also include
18 endorsement signature and/or maker logo data for permitting the generator means 18 to
19 generate appropriate commands for automatically effectuating disbursement of a negotiable
20 instrument with a desired endorser's signature and graphic logo already printed onto the
21 instrument.

22 Disbursement commands generated by the generator means 18 are transmitted to the
23 user preview means 30, which preferably comprises a conventional graphical user interface
24 display means on which is displayed the information for each payment disbursement
25 generated by the system 10, prior to being effectuated by the system 10. preview means 30
26 also includes conventional user input means for permitting the user to be able to make
27 changes to the disbursements prior to their being effectuated by the system 10. Any change
28 made to a disbursement causes the generator means 30 to generate new disbursement
29 command signals based upon the changed disbursement information, which then displayed
30 by preview means 30 to permit the user to preview the corrected disbursement, and to make
31 further changes, if desired.

32 Once the user indicates to the system 10 (by e.g., selecting an appropriate option on
33 the preview means graphical interface) that the disbursement is acceptable, the system 10
34 then effectuates the disbursement. preferably, in system 10, this is accomplished by

1 transmitting the disbursement commands generated by the generator means 18 to the
2 disbursement effectuating means 32. Effectuating means 32 preferably comprises EFT
3 effectuating means 34 and negotiable instrument printing means 36 for effectuating EFT
4 disbursements and/or printed negotiable instrument disbursements, as determined by the
5 disbursement criteria stored in the database means 20 (or supplied by the user via the preview
6 means 30, in the manner discussed above) for each of the disbursement types. preferably,
7 EFT effectuating means 34 comprises conventional financial EDI and ACH means, and
8 printing means 36 comprises one or more conventional MICR laser printer means. Of
9 course, the types of EFT protocols and negotiable instrument forms supported by the means
10 34 and 36, respectively, are variable depending upon the particular needs of the user of the
11 system 10 and the protocols supported by the institutions whose disbursement accounts are to
12 be debited. Additionally, generator means 18 generates control signals appropriate for
13 effectuation of the disbursements using means 34 and 36. After disbursement has been
14 effectuated, the information used to generate the disbursement is stored in database means 20
15 for later retrieval, auditing, and/or use in reports generated by audit generating means 26, in
16 the manner that will be described more fully below.

17 System 10 also includes encryption/decryption means 22. Means 22 encrypts
18 information stored in the database means 20 to prevent access thereto by unauthorized
19 personnel. The information stored in the database 20 may be retrieved into a user-readable
20 form (via e.g., the audit means 26) by supply of a user-specified or predetermined password
21 string to the system 10 via the entry means 14. Likewise, entry of disbursement requests to
22 the system 10 may be prevented by preventing decryption of disbursement criteria stored in
23 the database 20 by the rest of the system 10 unless the password is supplied to the system 10
24 via the entry means 14 prior to entry of the disbursement requests.

25 Data archive means 24 uses conventional data compression techniques to compress
26 and archive infrequently used data stored in the storage means 20. This reduces the amount
27 of storage space dedicated to storage of infrequently used data, thereby increasing the amount
28 of space available for storage of other, more frequently used data.

29 Audit/report generating means 26 comprises conventional display and/or hard copy
30 printing means (not separately shown) for generating disbursement and/or other financial
31 reports based upon the disbursement information and criteria stored in the database 20. As
32 noted above, unless an appropriate password is entered to the system 10 via the user control
33 means 14, the information stored in the database means 20 remains encrypted, thereby
34 preventing access to useful data by the audit generating means 26. Audit generating means

1 26 may also permit transmission to the institutions whose accounts are to be debited confirms
2 of the disbursements whereby to permit so-called "positive pay" capabilities.

3 Finally, system 10 also comprises monitoring means 28 for monitoring the system 10
4 to ensure that the system 10 is functioning properly and that no improper disbursements are
5 made. If a fault condition is determined to exist anywhere in the system 10, the monitoring
6 means 28 prevents the effectuating mechanisms 32 from effectuating disbursements, and
7 indicates the failure condition to the user by conventional means.

8 With reference being made to Figure 2, one preferred embodiment 51 of the process
9 of the present invention will now be described. Process 51 begins with the user inputting
10 and/or updating disbursement criteria to the database means (as shown at block 52) via the
11 receiving means 12. These criteria are then stored by the database means (see block 54) and
12 encrypted (see block 56) by the encryption means 22. An acceptable password is then
13 entered to enable access to the information stored in the database. One or more disbursement
14 requests are then input to the system 10 by the receiving means 12 (see block 58). The
15 generator means 18 uses the disbursement requests and the criteria stored in the database to
16 generate the payment disbursements and effectuating commands (see block 60), in the
17 manner described previously. Functioning of the system 10 is monitored, and if it is
18 determined to be improper, disbursement is aborted, and the user is notified of the failure
19 condition (see block 64). The user is then permitted to preview and change the
20 disbursements by the preview means 30, if desired (see block 66). Assuming the
21 disbursements are acceptable the effectuating commands are transmitted to the effectuating
22 mechanisms 32 (see block 68). The disbursements are then effectuated by the mechanisms
23 32 (see block 70). The disbursements are then stored in the disbursement log (not shown) of
24 the database means 20 (see block 72).

25 Referring now to Figure 3, the remittance delivery system 80 of the present invention
26 is depicted in functional block diagram form. As an overview, remittance delivery system 80
27 of the present invention is designed to receive and interpret payment application data (e.g.
28 generated by financial applications (e.g., accounting systems, A/P, P/R, T&E, etc.)), reformat
29 the
30 data into an appropriate format, and forward the remittance data portion thereof (e.g., stub
31 information portion) to a recipient in one or more user pre-defined formats. Referring briefly
32 to Figure 4, Payment Information 82 includes check data 86 and the "stub portion" 84
33 (remittance data) of the payment. Check data 86 is processed in accordance with the above-
34 defined principles, i.e., to effectuate and EFT and/or negotiable instrument payment via

1 disbursement effectuating mechanism 32. Remittance delivery system 80 is designed to
2 accept the remittance data 84 (i.e., invoice data, message data, payee information data, etc.)
3 and provide same to an intended recipient in one or more of a plurality of pre-selected
4 formats and/or delivery mechanisms.

5 Accordingly, payment information 82 is provided to file integration engine 88 which
6 translates and/or formats the data received (generated by accounting systems, A/P, P/R, T&E,
7 etc.) into a single format for further processing. To that end, file integration engine 88 is
8 preferably adapted with appropriate file filter/reading mechanisms to accommodate a variety
9 of payment information data formats. In addition, modular updates may be added to file
10 integration engine 88 to permit reading of new data formats. Once the data is in the
11 appropriate format, the data is fed into remittance generating engine 90 which is preferably
12 adapted to automatically effectuate delivery of remittance information in one or more pre-
13 selected formats to one or more intended recipients, as described below.

14 Remittance generating engine 90 receives preformatted data from file integration
15 engine 88 and effectuates a remittance delivery to an intended recipient 92. As shown in
16 Figure 3, the remittance advice can be output to a recipient as an email (e.g., MAPI, VIM,
17 cc:mail, etc) 92A, fax (e.g., COPIA, AIFP, FACSYS MAPI, etc.) 92B, hard copy print 92C
18 and/or internet transmission via the Web 92D. To that end, remittance generating engine 90
19 scans a data field (or fields) in the data to identify the recipient, e.g., by name, e-mail address,
20 company name, identification number, etc. This information is checked against remittance
21 preference database 94, to ensure that the remittance will be forwarded to the proper
22 recipient, and by the proper, pre-defined method of delivery. If a proper match is found, the
23 remittance data is forwarded. If not, an error is returned to the user of the system 80
24 indicating same. To that end, the user can instruct the system 80 to print all error messages,
25 or to recheck the data using a different data field.

26 Advantageously, remittance preference database 94 can be updated both by a user of
27 system 80, and by any recipient (e.g. payee-vendor) who receives a remittance delivery;
28 thereby permitting a recipient to change the message delivery preference, e.g., from email to
29 fax, etc., or change other data within the payment data shown in Fig. 4. Thus, remittance
30 preference database 94 can be appropriately adapted with networking hardware/software to
31 permit remote recipients access to the database. It should be noted that remittance preference
32 database 94 is preferably adapted with standard and/or proprietary password protection
33 algorithms to ensure security. In addition to identification information, remittance preference
34 database 94 also can associate message data, preferred format data, preferred delivery data,

1 etc. with the remittance data.

2 Modifications to the present invention are possible. For example, remittance
3 generating engine 90 can be appropriately adapted to forward an email remittance delivery as
4 a text file, text attachment, or as a pre-selected file format (e.g., MS Word, accounts
5 receivable input data file, etc.). In addition, remittance generating engine 90 can be
6 appropriately modified to automatically compress (e.g., via ZIP algorithms, etc) and/or
7 password encrypt any electronic transmission.

8 Moreover, the system 80 of the present invention is intended to provide remittance
9 advice delivery to both enterprise recipients and individual recipients, and it should be noted
10 that the present invention can be appropriately configured as a network-based system to
11 permit, e.g., geographically remote data input (payment detail 82) and/or geographically
12 remote remittance delivery. Also, the present invention permits all of the information
13 included in the payment information to be processed in a single step. Thus, the check data 86
14 and remittance data 84 can all be processed in one pass: via the system shown in Figure 1 and
15 Figure 3, respectively.

16 It will be understood by those skilled in the art that file integration engine, remittance
17 generating engine and preference database 94 can be composed of off-the-shelf and or
18 proprietary computer hardware processes and/or components and modified to achieve the
19 stated functionality. In addition, it will be appreciated that although not shown in the
20 drawings, remittance generating engine is appropriately adapted with hardware and/or
21 software to permit forward of remittance data via the mechanisms shown in reference number
22 92 of Figure 3.

23 Thus, it is evident that there has been provided a remittance delivery system and
24 method that fully satisfy the aims and objectives hereinbefore set forth. It will be
25 appreciated that although specific embodiments of the present invention have been presented,
26 many modifications, alternatives, and equivalents thereof may be made without departing
27 from the spirit and scope of the invention. Accordingly, the present invention is intended to
28 cover all such alternatives, modifications, and equivalents as may be included within the
29 spirit and broad scope of the invention as defined only by the hereinafter appended claims.

30

CLAIMS

1
2 1. A remittance delivery system, comprising a file integration engine receiving payment
3 information data including remittance data in a one of a plurality of data formats and
4 translating and formatting said remittance data into a single, pre-defined data format, and a
5 remittance generating engine receiving said pre-defined data and for forwarding remittance
6 data to at least one remittance recipient.

7 2. A system as claimed in claim 1, wherein said remittance data comprises invoice data,
8 name data, company name data and identification number data and said remittance data being
9 generated by one or more accounting systems including accounts payable, payroll and T&E
10 data generating systems.

11 3. A system as claimed in claim 1, wherein said remittance delivery data being
12 forwarded as email message data to said recipient's email account, and wherein said email
13 message data further includes attachment data in a predefined format containing said
14 remittance data.

15 4. A system as claimed in claim 1, wherein said remittance delivery data comprising a
16 facsimile transmission being forwarded to said recipient's fax number, and/or remittance
17 printed data being forwarded to a recipient.

18 5. A system as claimed in claim 1, wherein said remittance generating engine also being
19 for compressing and encrypting said remittance delivery data before said data is forwarded to
20 said recipient.

21 6. A system as claimed in claim 1, further comprising a remittance preference database
22 for storing information pertaining to said recipient, and wherein each said recipient being
23 permitted access to said database to update and /or create recipient preference data, and
24 wherein said remittance generating engine also being for comparing said remittance data to
25 said database to determine the identity and preference of said recipient.

26 7. A method of providing automatic remittance advice delivery, comprising the steps of:
27 formatting a plurality of differing remittance data into a predefined file data format;
28 determining a pre-selected delivery mechanism;
29 generating remittance advice data based on pre-selected criteria; and
30 forwarding said remittance data to one or more recipients using said pre-selected
31 criteria and said pre-selected delivery mechanism.

32 8. A method as claimed in claim 7, further comprising the steps of comparing said
33 remittance advice data to a database to match information contained with said remittance data
34 with data on the database, and compressing a encrypting said electronic mail data before

1 forwarding to said recipient.

2 9. A method as claimed in claim 7, wherein said remittance data includes one or more
3 payment data being generated by one or more payment systems.

4 10. A method as claimed in claim 8, wherein said database is for storing said pre-selected
5 criteria and said pre-selected delivery mechanism and said database being accessible by the
6 sender of said remittance data and said recipient of said remittance data.

7

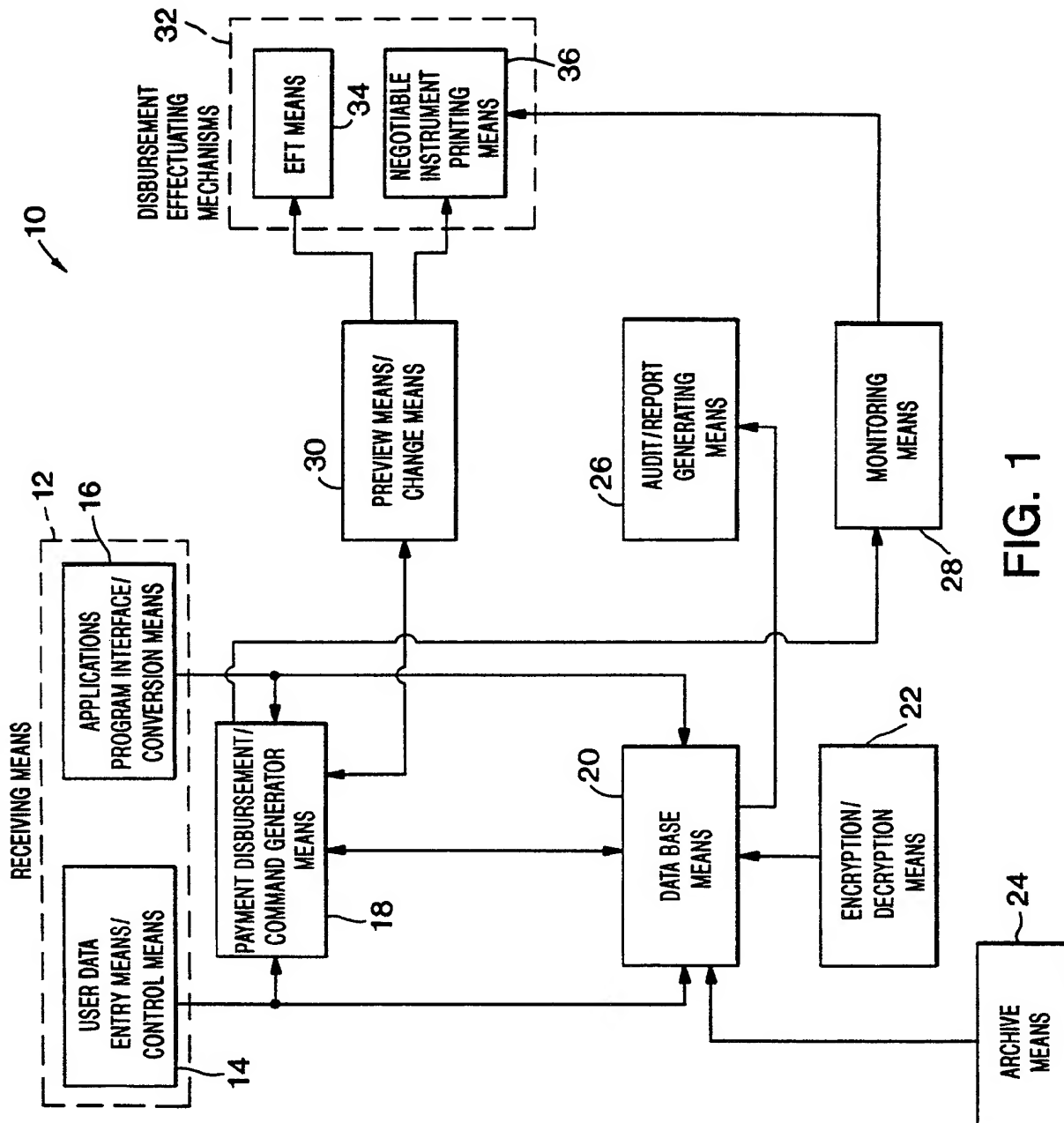


FIG. 1

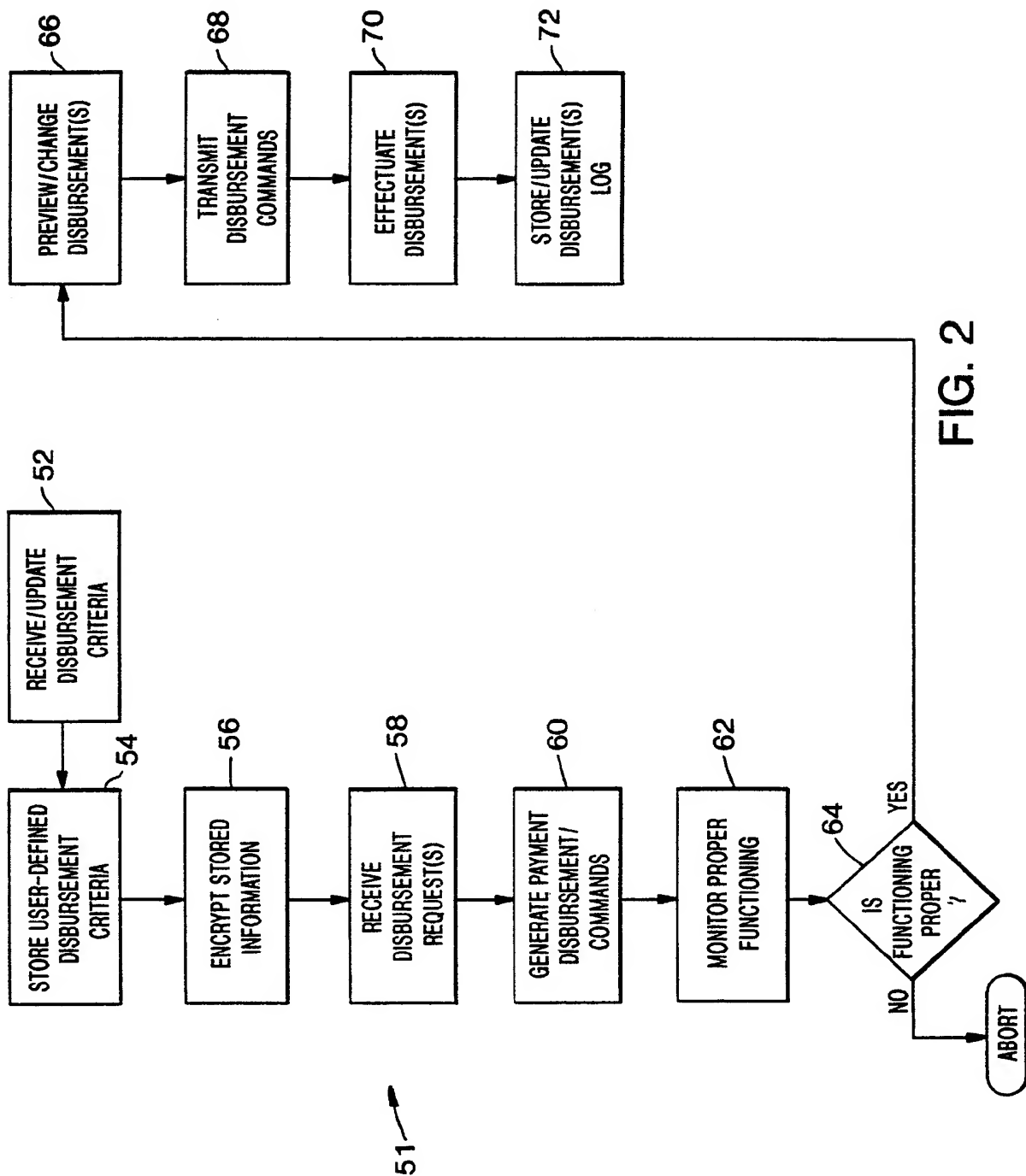


FIG. 2

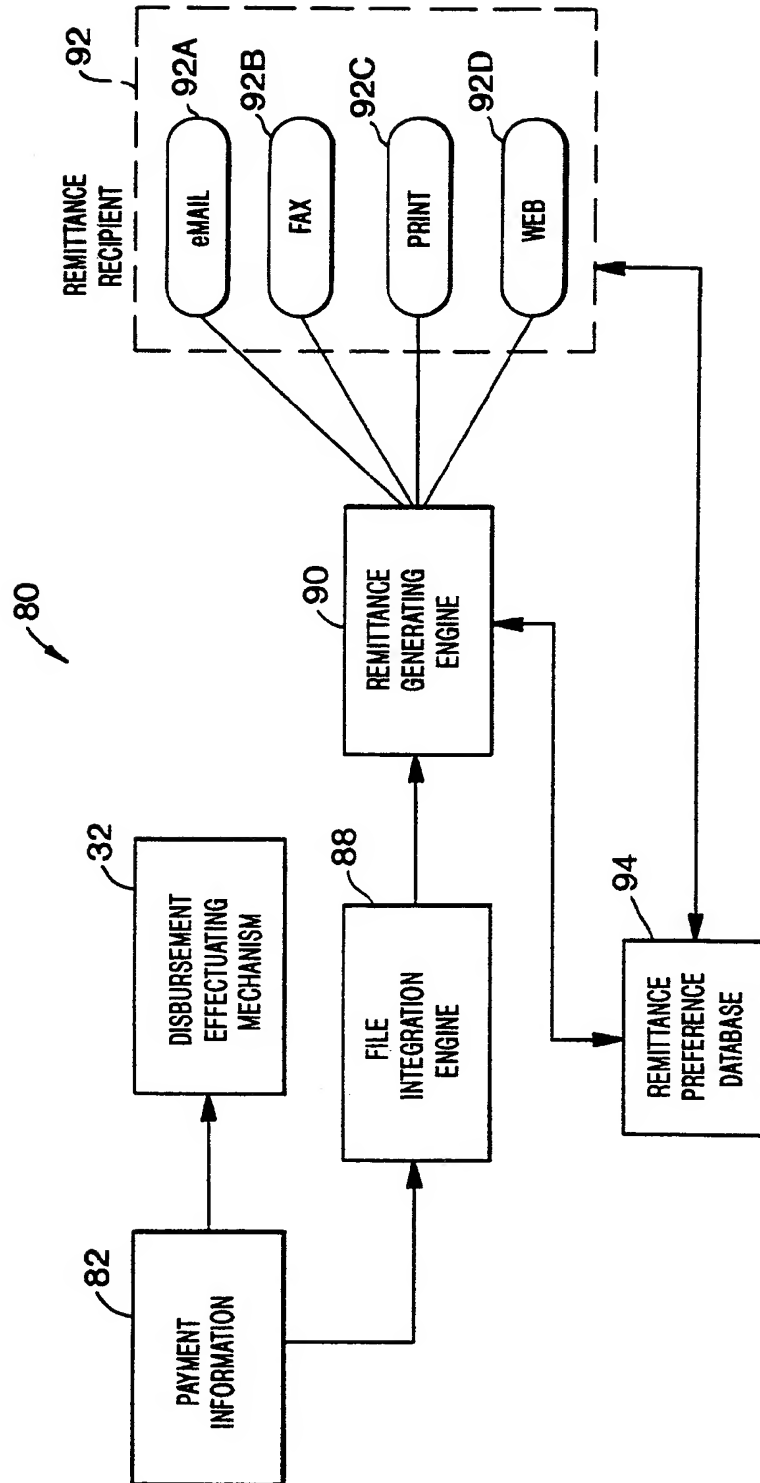


FIG. 3

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
84										82													
ONE THOUSAND TWO HUNDRED SIXTY SIX AND 51/100 DOLLARS										*****1,266.51													
ABC Company										00376694													
P O BOX XXXXX										02/25/98													
TULSA OK 88888										00376694													
AP-000-0004948										CSW SERVICES, INC.													
106856 116426										01-28-98													
107579 117006										01-29-98													
107584 116414										01-28-98													
107609 115397A										01-29-98													
107611 116983										01-29-98													
108608 117121										01-29-98													
108671 115947										01-28-98													
109180 117371										01-29-98													
ORD# 27193										419.51													
110711 116613										01-28-98													
110942 116499										01-28-98													
TOTALS										1,266.51													
										.00													
										1,266.51													

FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/31248

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04L 29/06; G06F 13/42

US CL : 705/40; 709/230

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/1, 16, 17, 26, 27, 30, 34, 35, 39 40; 709/217, 218, 219, 230

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
noneElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
none

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,377,309 A (SONOBE et al) 27 December 1994, see abstract.	1-10
X	US 5,557,798 A (SKEEN et al) 17 September 1996, see abstract.	1-10
X	WO 97/17678 A1 (HANNULA et al) 15 May 1997, see abstract.	1-10
X	US 5,717,868 A (JAMES) 10 February 1998, see abstract.	1-10
X	⁴⁵ US 5,794,234 A (CHURCH et al) 11 August 1988, see abstract.	1-10
X, E	WO 99/03243 A1 (BAZET et al) 21 January 1999, see abstract.	1-10

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

17 MARCH 2000

Date of mailing of the international search report

18 APR 2000

Name and mailing address of the ISA/US
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